

Papahānaumokuākea Marine National Monument

Marine Debris

Management Issue

Many reefs in the Papahānaumokuākea Marine National Monument (PMNM or Monument) are inundated with marine debris originating from commercial fishing operations in the North Pacific or other marine or terrestrial sources. These objects degrade reef health by abrading, poisoning, smothering and dislodging corals and other benthic organisms, and entangling fish, marine mammals, crustaceans and other mobile species. Effective management requires a better understanding of the extent and impacts of this threat on the natural and historical resources of the Monument.

Description

Marine debris accumulation on the reefs and beaches of the Northwestern Hawaiian Islands (NWHI) is a staggering problem, as an estimated 57 tons of new marine debris enters PMNM on an annual basis. Marine debris, especially derelict fishing nets and gear, plastics, and other hazardous materials, is a severe and chronic threat to shallow coral reef ecosystems of the Monument. It adversely impacts the endangered Hawaiian monk seal, the threatened green sea turtle, albatrosses and other wildlife species which become entangled in or ingest marine debris. Large masses of fishing nets degrade coral reef health by shading, abrading, or dislodging fragile corals or by preventing reef regeneration.



Derelict fishing gear washed up on the beach at Midway Atoll. Photo credit: James Watt

Marine debris containing hazardous materials such as pesticides, petroleum by-products, toxic chemicals and phosphorus flares washes up on the beaches of the NWHI and is a danger to wildlife and humans. It is unknown how much of these toxic compounds are released from the debris while floating in the marine environment.

Questions and Information Needs

- 1) What are the sources, types and accumulation rates of marine debris within the Monument?
- 2) How can we reduce the sources of debris which ends up in the NWHI?
- 3) What are the impacts to marine resources (i.e. coral) of removal activities?
- 4) What tools are available to detect marine debris before it enters the Monument?
- 5) Where is Hawaiian monk seal critical habitat that should be prioritized for marine debris removal efforts?
- 6) What is the spatial extent of marine debris impacts in the NWHI?
- 7) Are certain areas more or less susceptible to marine debris accumulation and/or impacts?
- 8) Are certain types of debris more likely to contain contaminants and can those be targeted for removal efforts?

Scientific Approach and Actions

- Contribute to the NWHI marine debris removal effort by developing and implementing a five-year marine debris removal strategy, which includes capacity and coordination mechanisms for the Monument
- Catalog, secure, contain and properly remove hazardous materials that wash ashore in the NWHI
- Support NOAA marine debris studies
- Work with and through U.S. international agencies and offices to promote international cooperation and involvement in addressing marine
- Investigate the sources, types and accumulation rates of marine debris
- Develop and standardize monitoring protocols for marine and terrestrial habitats
- Work with partners to continue to develop and implement an outreach strategy for marine debris
- Efforts dedicated to research and detection to help support monitoring, assessment, impact and accumulation

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For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>

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studies, studies to understand the characteristics and behavior of marine debris in the water column, economic impact studies, new technologies and methods for at-sea detection and removal.

Potential Key Partners and Information Sources

NOAA/NMFS/Pacific Island Fisheries Science Center, Coral Reef Ecosystem Division; NOAA Office of Response and Restoration's Marine Debris Program; US Fish and Wildlife Service; US Coast Guard; University of Hawai'i's Sea Grant College Program; US Navy; City and County of Honolulu; State of Hawai'i; Ocean Conservancy; Hawai'i Wildlife Fund; Native Hawaiian Cultural Practitioners; Schnitzer Steel Hawai'i Corporation; H-Power



Photo: A black footed albatross chick grows up in a nest of marine debris at Kure atoll. Photo Credit: Elizabeth Keenan

Management Support Products

- Draft scientific papers and reports
- Present at scientific meetings, workshops, symposia and conferences
- Develop education and outreach products to inform general public about marine debris issues

Planned Use of Products and Actions

- Refine and target marine debris efforts
- Define sensitive areas (e.g. areas with fragile or rare corals or areas of high monk seal density) and conduct regular clean-up efforts in those locations

Program References

PMNM Management Plan

- Action Plan 3.3.1 Marine Debris Action Plan
 - o Strategy MD-1: Remove and prevent marine debris throughout the life of the plan.
 - o Strategy MD-2: Investigate the sources, types and accumulation rates of marine debris.
 - o Strategy MD-3: Develop outreach materials regarding marine debris within 2 years.
- *Other Action Plans:*
 - o 3.2.1 – Threatened and Endangered Species
 - o 3.2.3 - Habitat Management and Conservation
 - o 3.3.2 - Alien Species
 - o 3.3.4 - Emergency Response
 - o 3.5.1 - Agency Coordination
 - o 3.5.4 - Ocean Ecosystems Literacy
 - o 3.6.3 - Coordinated Field Operations

PMNM Condition Report

- The issue of marine debris is references in response to seven of the seventeen questions: Question 6, 7, 8, 11, 12, 14 and 17 all have reference to marine debris in their response.

Other Documents

- Monument Goals 1, 2, and 3.

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